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REMARKS / DISCUSSION OF ISSUES

Claims 1-21 are pending in the application.

The Office action rejects claims 1-16 under 35 U.S.C. 101. The applicants respectfully traverse this rejection.

The Office action asserts that the claimed process merely manipulates an abstract idea. There is no basis for this assertion; claims 1-13 claim a method of encoding an audio stream, and claims 14-16 claim the corresponding encoded data stream. Encoding an audio stream is not an abstract idea; there is nothing abstract about encoding an audio stream into frames having a defined sequence of lengths, as specifically claimed by the applicants.

The Office action further asserts that the claims fail to show the transformation or reduction of subject matter to a different state. There is also no basis for this assertion, because the encoding of data is a classic example of a transformation. The claimed encoding process transforms an input audio stream into an encoded audio stream.

Because claims 1-16 clearly recite a new and useful method for encoding an audio stream, the applicants respectfully maintain that the rejection of claims 1-16 under 35 U.S.C. 101 is unfounded, and should be withdrawn.

The Office action rejects claims 17-21 under 35 U.S.C. 112, first paragraph. The applicants respectfully traverse this rejection.

The applicants respectfully maintain that techniques for encoding audio samples are common in the art, including, for example MPEG encodings. The applicants provide a number of examples using MPEG encodings of audio samples. As noted in the applicants' prior response, the applicants clearly teach that the frame lengths are controlled by selecting the appropriate number of 'overlap' blocks to include in the encoding. The applicants' FIGs. 7 and 8 clearly illustrate how to create frames having a defined sequence of lengths, as claimed. Given the numerous examples presented throughout the applicants' specification, one of skill in the art would be well able to make the claimed audio encoder and decoder.

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Because the applicants' written description of the invention, and of the manner and process of making and using it, is presented in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use the same, the applicants respectfully maintain that the rejection of claims 17-21 under 35 U.S.C. 112, first paragraph, is unfounded, and should be withdrawn.

The Office action rejects claims 1-4, 13-17, and 19-21 under 35 U.S.C. 102(a) over Fielder et al. (USP 6,226,608, hereinafter Fielder). The applicants respectfully traverse this rejection.

> "A rejection under U.S.C. 102… is proper only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim." **MPEP 2131**. "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." **BPAI Opinion No. 2005-2289, October 2005**.

Fielder fails to teach encoding audio data to provide an encoding that includes varying lengths of the audio frames in a defined sequence of frame lengths, as specifically claimed in independent claims 1, 13, and 17, upon which claims 2-12, 14-16, and 18 depend.

Fielder also fails to teach calculating an expected effective frame length of an incoming frame based on a defined sequence of frame lengths when decoding a stream, as claimed in claim 19, upon which claims 20-21 depend.

Fielder specifically and repeatedly teaches encoding of audio signals into frames of variable length, each length being determined by a control signal that is based on the characteristics of the particular audio signal. Fielder teaches:

> "In this embodiment, analyze 45 identifies characteristics of the one or more audio signals conveyed by the audio information that is passed along path 44. Examples of these characteristics include rapid changes in amplitude or energy for all or a portion of the bandwidth of each audio signal, components of signal energy that experience a rapid change in frequency, and the time or relative location within a section of a signal where such events occur. In response to these detected characteristics, control 46 generates along path 47 a control signal that conveys the lengths of segments in a frame of segments to be processed for each audio channel." (Fielder, column 9, lines 55-66.)

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> "In this embodiment, buffer 51 receives audio information from path 44 and assembles the audio information into a frame of overlapping segments having lengths that are adapted according to the control signal received from path 47." (Fielder, column 11, lines 4-8.)

Because the lengths of Fielder's segments are based on the determined characteristics of the audio signal, Fielder's encoding cannot be said to provide varying lengths of the audio frames in a defined sequence of lengths.

The Office action asserts that Fielder teaches varying lengths of the audio frames in a defined sequence of frame lengths at column 5, line 65 - column 6, line 8. The applicants respectfully disagree with this assertion. At the cited text, Fileder teaches:

> "According to the teachings of yet another aspect of the present invention, an information storage medium such as optical disc, magnetic disk and tape carries video information arranged in video frames and encoded audio information arranged in encoded information frames, wherein a respective encoded information frame corresponds to a respective video frame and includes control information conveying lengths of segments of audio information in a sequence of overlapping segments, a respective segment having a respective overlap interval with an adjacent segment and the sequence having a length equal to the frame interval plus a frame overlap interval, and blocks of encoded audio information, a respective block having a respective length and respective content that, when processed by an adaptive block-decoding process, results in a respective segment of audio information in the sequence of overlapping segments." (Fielder, column 5, line 60 - column 6, line 9.)

As taught be Fielder, because the lengths of Fielder's audio segments vary indeterminately, these varying lengths must be expressly communicated to the decoder, and at the cited text, Fielder teaches that these lengths are communicated via the storage medium that is used to contain the encoded data.

As illustrated in Fielder's FIG. 4, the deformat element 63 extracts the control information that is communicated from the encoder (via, for example, a storage medium) to define the length of each segment, and this control information is used by the decode element 70 to decode the encoded audio stream:

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"In this embodiment, deformat 63 receives frames of encoded information
that are aligned with a video reference received from path 62. The frames of
encoded information convey control information and blocks encoded audio
information. Control 65 generates along path 67 a control signal that conveys
the lengths of segments of audio information in a frame of segments to be
recovered from the blocks of encoded audio information." (Fielder, column
10, lines 31-38.)

Because Fielder teaches varying the lengths of audio segments based on the
characteristics of the encoded audio signal, and communicating these varying
lengths to the decoder, it is clearly evident that Fielder does not teach lengths that
vary in accordance with a defined sequence, as claimed in each of independent
claims 1, 13, and 17.

Additionally, because Fielder does not teach lengths that vary in accordance
with a defined sequence, Fielder cannot be said to teach calculating an expected
effective frame length of an incoming frame based on such a defined sequence of
frame lengths, and adjusting the actual length of the incoming frame to make it equal
to the expected frame length, as specifically claimed in independent claim 19.

Because Fielder fails to teach each of the elements of the applicants'
independent claims, the applicants respectfully maintain that the rejection of claims 1-
4, 13-17, and 19-21 under 35 U.S.C. 102(a) over Fielder is unfounded, per MPEP
2131, and should be withdrawn.

The Office action rejects claim 18 under 35 U.S.C. 103(a) over Fielder. The
applicants respectfully traverse this rejection. Claim 18 is dependent upon claim 17,
and in this rejection, the Office action relies on Fielder for teaching the elements of
claim 17. As noted above, Fielder fails to teach each of the elements of claim 17.
Accordingly, the rejection of claim 18 under 35 U.S.C. 103(a) that relies on Fielder for
teaching the elements of claim 17 is unfounded, and should be withdrawn.

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In view of the foregoing, the applicants respectfully request that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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